CLASSIFICATION: UNCLASSIFIED

BUDGET ITEM JUSTIFICATION SHEET P-40										DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY Aircraft Procurement, Navy/APN-5 Aircraft Modifications				P-1 ITEM NOMENCLATURE S-3 Series Modifications							
Program Element for Code B Items:				Other Related Program Elements							
	Prior Years	ID Code	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
QUANTITY											
COST (In Millions)	375.8		29.6	8.3	1.9	0.8	0.8	0.5	0.0	0.0	417.6

This line item funds modifications to S-3 aircraft. The S-3B is a carrier based, all weather, high wing, high subsonic, twin engine, multi-mission aircraft capable of Anti-Surface Warfare (ASUW) operations and tanking. The overall goal of the modifications budgeted in FY2005 is to continue the UHF/VHF communications improvement and the Co-Processor Memory Unit efforts; and to upgrade critical avionics, and critical structures within the aircraft. Total Active Inventory (TAI) is 111. The S-3B will reach end of service in 2015. The specific modifications budgeted and programmed are:

(TOA, $ in Millions)

OSIP No.	Description	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total
39-94	UHF/VHF Comm. Impr. Prog.	85.1	19.0	7.7	1.9						113.6
12-95	Critical Structures	50.1	2.5	0.5							53.1
20-95	Critical Avionics Upgrade	192.8	5.6								198.4
4-96	Co-Processor Memory Unit	47.8	2.5	0.1							50.5
XX-06	Flight Critical Systems Sustainment					0.8	0.8	0.5			2.0
TOTAL		375.8	29.6	8.3	1.9	0.8	0.8	0.5			417.6

Totals may vary due to rounding

CLASSIFICATION:

DD Form 2454, JUN 86

UNCLASSIFIED

Exhibit P-3a INDIVIDUAL MODIFICATION

MODIFICATION TITLE: Ultra High Frequency (UHF) / Very High Frequency (VHF) Communications Improvement Program (CIP) (OSIP 39-94)

MODELS OF SYSTEM AFFECTED: S-3B TYPE MODIFICATIO Operational Improvement

DESCRIPTION/JUSTIFICATION:

The S-3B has an operational requirement for reliable UHF and VHF communications. The current UHF radio (AN/ARC-156) suffers from serious reliability and obsolescence problems, and lacks the internal intermodulation protection required for proper operation in today's operational environment. The AN/ARC-187 UHF radio to be installed is a derivative of the AN/ARC-164 which is presently utilized by the Air Force and would correct the above mentioned deficiencies. The installation also permits compatibility with the JCS requirements for UHF Satellite Communications (SATCOM) users. The radio is common with the P-3C aircraft and this commonality will significantly reduce logistic support requirements. The S-3B does not currently have a VHF radio, which is required by International Air Traffic Control regulations and represents a potential safety flight problem when operating in international airspace and with foreign air fields. The AN/ARC-182 is the Navy's standard VHF radio for tactical aircraft and provides the VHF capability required. One AN/ARC-182 radio will be installed in 84 S-3B aircraft. This modification is validated in ORD 393-88-95, approved 23 Mar 95. S-3B ECP#423 constitutes the CIP integration, and Communication Control Group (CCG) modification.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The AN/ARC-182 has Approval for Full Production (AFP), and will be verified in the S-3B with trial kit installation (TKI). The AN/ARC-187 installation was verified in the S-3B with Trial Kit Installation. Milestone III Approval for Full Production for S-3B Communications Improvement Program was granted on 23 June 1995.

FINANCIAL PLAN (TOA, $ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
RDT&E																				
PROCUREMENT																				
Installation Kits																				
PROTOTYPE/TKI	2	1.8																	2	1.8
CIP A Kit	61	15.5	16	3.3	5	1.2													82	19.9
MD-1324 Modem Control Mod Kit																				
Installation Kits N/R		11.4																		11.4
Installation Equipment																				
ARC-182 - R/T & Mount	62	*	19	*	5	*													86	*
MD-1324 Modem	62	1.9	19	.6	5	.2													86	2.7
MD-1324 Modem Control		*				*														
Crypto Fill Panels (2 per A/C)	124	.1	38	*	10	*													172	.2
CCG Modification	68	17.3	19	4.3	5	1.3													92	22.8
AS-3557 Antenna	62	.2	19	.1	5	*													86	.3
Diplexer Preamp	62	.4	19	.1	5	*													86	.5
ARC-187 - B Kit (2 per A/C)	124	10.3	38	2.9	10	.7													172	13.9
Installation Equipment N/R		1.4																		1.5
Engineering Change Orders																				
Data		1.9		.5																2.4
Training Equipment	8	4.4																	8	4.4
Support Equipment		1.5																		1.5
ILS		1.9		.5		.4		.1												2.9
Other Support		11.1		3.4		1.1		.3												15.9
Interim Contractor Support																				
Installation Cost	36	4.0	25	3.1	19	2.7	12	1.4											92	11.3
TOTAL PROCUREMENT	635	85.1	187	19.0	50	7.7		1.9											872	113.6

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

** AN/ARC-182 radios to be obtained from F/A-18 or other aircraft installing AN/ARC-210 radios.

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: UHF/VHF Communications Improvement Program (OSIP 39-94)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Team

ADMINISTRATIVE LEADTIME: 6 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: 3/03 FY 2004: 3/04 FY 2005:

DELIVERY DATE: FY 2003: 3/04 FY 2004: 3/05 FY 2005:

($ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
FY 2002 & PY (71) kits	36	4.0	25	3.1	10	1.4													71	8.6
FY 2003 (16) kits					9	1.3	7	.8											16	2.1
FY 2004 (5) kits							5	.6											5	.6
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL **	36	4.0	25	3.1	19	2.7	12	1.4											92	11.3

** Includes trainer install(s).

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	36		9	9	7		6	6	7		4	4	4								
Out	36		9	9	7		6	6	7		4	4	4								

	FY 2008				FY 2009				To	
	1	2	3	4	1	2	3	4	Complete	TOTAL
In										92
Out										92

Exhibit P-3a INDIVIDUAL MODIFICATION

MODIFICATION T Critical Structures (OSIP 12-95)

MODELS OF SYSTEM AFFECTE S-3B TYPE MODIFICATION: SLEP

DESCRIPTION/JUSTIFICATION:

S-3 aircraft are included in the Naval Aviation Plan to support the carrier Battle Group through CY 2015. The S-3A aircraft was procured from 1972 to 1976 (1960's design/avionics technology), based on ORD #0927-AS dated 25 Mar 77. The S-3B Weapons System Improvement Program, which modified the S-3A to an S-3B, focused primarily on weapon system upgrades for mission enhancement and did not upgrade the critical airframe safety of flight avionics systems. This upgrade is a series of modifications required in order to ensure effective, safely flyable aircraft through the year 2015. Specifically, the Critical Structures Upgrade modification includes replacement of the windshield temperature controller and the following airframe components: wingfold rib, horizontal stabilizer hinge fitting, flight control elements, fuel flow/bleed air select vent valves, counterweights, and flap tack ribs. The Service Life Assessment Program (SLAP) (FY98) will certify that the fatigue and operational loads of the aircraft are accurately represented in the full scale reaction frame.

RECURRING KIT STATUS: The Critical Structures Airframe kit (consisting of horizontal stabilizer hinge fitting - ECP AL-808, counterweights - ECP AL-802, flap track ribs - ECP AL-796, and flow/bleed air select vent valves ECP AL-789), the Flight Control Elements kit, - ECP-AL807-R1 and the Inner Wing Empennage Kit for all 111 S-3B aircraft. Starting in FY01 the Wingfold Rib program has been terminated and funds were reprioritized to UHF/VHF Comm Improvement Program (OSIP 39-94).

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Replacement of the airframe components/windshield temperature controller does not require any development. Non-recurring engineering for all five components were completed in FY1995, first production buy began in FY1996 and installs commenced in FY1997. The non-recurring engineering will include design and integration efforts of Critical Structures airframe components.

FINANCIAL PLAN (TOA, $ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
RDT&E - H2452		45.5																		45.5
PROCUREMENT																				
Installation Kits																				
Critical Structures Airfrar	111	3.9																	111	3.9
Flight Controls Elements	111	3.5																	111	3.5
Inner Wing BL144	111	1.4																	111	1.4
Inner Wing BL71	112	.2																	112	.2
Inner Wing BL58/70 **		**		**		**														
Installation Kits N/R		19.8																		19.8
Installation Equipment																				
Inner Wing BL58/70 **		**		**		**														
Installation Equipment N/R																				
Engineering Change Orders																				
Data		.2																		.2
Training Equipment		.2																		.2
Support Equipment																				
ILS		.1																		.1
Other Support		4.5		.9		.5														5.9
Interim Contractor Support																				
Installation Cost	111	16.2		1.6															111	17.8
TOTAL PROCUREMENT	445	50.1		2.5		.5													445	53.1

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

** No A kits required. B kits provided by supply system.

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECT: S-3B MODIFICATION TITLE: Critical Structures (OSIP 12-95) Inner Wing - BL144 (AFC-285)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP/Contractor Field Mod Teams

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: ____ FY 2004: ____ FY 2005: ____

DELIVERY DATE: FY 2003: ____ FY 2004: ____ FY 2005: ____

($ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
FY 2002 & PY (108) kits	97	2.2	3	0.5	8	*													108	2.7
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	97	2.2	3	.5	8	*													108	2.7

*FY03 funds installs in FY04.

Commander, Sea Control Wing Pacific (CSCWP) planned to install BL-144 (AFC-285) during IMC Inspections. The war created non-availability of aircraft for FY-03 installations, therefore moving 8 installations to FY04.

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	97		1		2	2	2	2	2												
Out	85	12	1		2	2	2	2	2												

	FY 2008				FY 2009				To	
	1	2	3	4	1	2	3	4	Complete	TOTAL
In										108
Out										108

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95)
Inner Wing - BL71

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 1 Months

PRODUCTION LEADTIME: 2 Months

CONTRACT DATES: FY 2003: FY 2004: FY 2005:

DELIVERY DATE: FY 2003: FY 2004: FY 2005:

($ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
FY 2002 & PY (112) kits	112	.5																	112	.5
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	112	.5																	112	.5

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	112																				
Out	112																				

	FY 2008				FY 2009				To	
	1	2	3	4	1	2	3	4	Complete	TOTAL
In										112
Out										112

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95) Flight Control Elements

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: _____ FY 2004: _____ FY 2005: _____

DELIVERY DATE: FY 2003: _____ FY 2004: _____ FY 2005: _____

($ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
FY 2002 & PY (111) kits	111	6.3																	111	6.3
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	111	6.3																	111	6.3

Installation Schedule

	FY 200	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	111																				
Out	107	4																			

	FY 2008				FY 2009				To	
	1	2	3	4	1	2	3	4	Complete	TOTAL
In										111
Out										111

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Critical Structures (OSIP 12-95)
Critical Structures Airframe Kit

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months

PRODUCTION LEADTIME: 9 Months

CONTRACT DATES: FY 2003: ____ FY 2004: ____ FY 2005: ____

DELIVERY DATE: FY 2003: ____ FY 2004: ____ FY 2005: ____

($ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
FY 2002 & PY (111) kits	111	6.3																	111	6.3
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	111	6.3																	111	6.3

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	111																				
Out	107	4																			

	FY 2008				FY 2009				To	
	1	2	3	4	1	2	3	4	Complete	TOTAL
In										111
Out										111

Exhibit P-3a

MODELS OF SYSTEMS AFFECTES-3B MODIFICATION TITLE: Critical Structures (OSIP 12-95)
Inner Wing - BL 58/70 (AFC-292)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: NADEP Field Mod Team/MIP

ADMINISTRATIVE LEADTIME: Months PRODUCTION LEADTIME: Months

CONTRACT DATES: FY 2003: FY 2004: FY 2005:

DELIVERY DATE: FY 2003: FY 2004: FY 2005:

($ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009 To Complete				TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
FY 2002 & PY () kits *	49	.8																	49	.8
FY 2003 () kits *			42	1.0															57	1.0
FY 2004 () kits *					15	**													15	**
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	49	.8	42	1.0	15	**													106	1.8

* No A kits required. B kits provided by supply system.

**FY03 funds installs in FY04.

Commander, Sea Control Wing Pacific (CSCWP) planned to install BL-58/70 (AFC-292) during IMC Inspections. The war created non-availability of aircraft for FY-03 installations, therefore moving 15 installations to FY04.

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	49	10	10	10	12	4	4	4	3												
Out	37	12	10	10	10	12	4	4	4	3											

	FY 2008				FY 2009				To	
	1	2	3	4	1	2	3	4	Complete	TOTAL
In										106
Out										106

Exhibit P-3a INDIVIDUAL MODIFICATION

MODIFICATION TITLE S-3 Critical Avionics Upgrade (OSIP 20-95)

MODELS OF SYSTEM AFFECTED: S-3B TYPE MODIFICATION: Operational Improvement/Obsolescence

DESCRIPTION/JUSTIFICATION:

This program replaces the Automatic Flight Control Systems (AFCS), Inertial Navigation Systems (INS), Flight Instruments, Mission Displays, and Armament Control Systems (ARMCOS) which have become significant obsolescence/non-supportability degraders for the S-3B aircraft. Modification of these critical avionics systems will ensure respective system operation and availability for the current and projected (2015) service life of the airframe. Trainer procurement is to incorporate all four systems into the S-3B Fleet Weapons Systems Trainers (WST), Position Trainer Complex Modules (PTCM) and Maintenance Trainers. The requirement for these modifications is described in Operational Requirements Document (ORD) 408-88-95 dated 13 July 95.

DIGITAL FLIGHT DATA COMPUTER (DFDC) (Engineering Change Proposal (ECP) 426): The Flight Data Computer (FDC) is the central computing component of the Automatic Flight Control System (AFCS). The present obsolete FDC is subject to failure modes which have been demonstrated to cause uncommanded roll input to the flight control system. This modification will be installed in all of the existing 109 S-3B aircraft.

CARRIER AIRCRAFT INERTIAL NAVIGATION SYSTEM (CAINS II); EMBEDDED Global POSITIONING SYSTEM (GPS) INERTIAL (EGI); ELECTRONIC FLIGHT INSTRUMENTS (EFI) (ECP 427): This is a replacement program for the S-3B navigation, heading and attitude system, and associated flight instruments. The existing system has become increasingly non-supportable due to parts obsolescence and material condition of the chassis and internal wiring. Replacement avionics hardware consists of a CAINS II, an EGI, four new EFIs for the cockpit, and 1553B digital Navigation Interface Unit (NIU) which connects the flight instruments to the navigation system bus and mission computer. The CAINS II and the EGI provide the two required heading platform stabilization sources necessary for embarked operations or night/instrument flight. This modification will be installed in all of the existing 109 S-3B aircraft.

STORES MANAGEMENT SYSTEM (SMS)(ECP NORIS 008-00) : This modification provides an obsolescence upgrade of the Armament Control Panel, Bomb Bay/Wing Decoders and wiring that comprise the current S-3 Armament Control System (ARMCOS) and a NDI digital Stores Management System (SMS) including small circular error probability weapon. An operable SMS is required for loading, carriage and/or jettison of any internal or external stores including the Aerial Refueling Store, torpedoes, and/or Harpoon. This modification will be installed in 42 S-3B aircraft, with B kits procured for 43 aircraft.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Milestone III decision for Critical Avionics Upgrade approved Oct 1995. DFDC hardware CDR held SEP 96, software CDR held MAY 97, EDM testing commenced DEC 97. CAINS/EGI/EFI system CDR held OCT 97, prototype install commenced July 1998. RFP for SMS released May 1998. Displays CDR commenced June 1998.

Exhibit P-3a INDIVIDUAL MODIFICATION

MODIFICATION TITLE S-3 Critical Avionics Upgrade (OSIP 20-95)

MODELS OF SYSTEM AFFECTED: S-3B TYPE MODIFICATI Safety/Obsolescence

FINANCIAL PLAN (TOA, $ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complet		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
RDT&E																				
PROCUREMENT																				
Installation Kits ***																				
SMS (ARMCOS)	42	2.0																	42	2.0
CAINS/EFI/NIU	111 ***	17.8																	111	17.8
Installation Kits N/R		15.7																		15.7
Installation Equipment																				
DFDC	92 ***	8.4																	92	8.4
CAINS	111 ***	43.1																	111	43.1
SMS (ARMCOS)/MAVERICK PL	43	6.3																	43	6.3
Installation Equipment N/R		31.4																		31.4
Engineering Change Orders																				
Data		1.4																		1.4
Training Equipment		8.4		.4																8.8
Support Equipment																				
ILS		2.1																		2.1
Other Support		44.4		2.3																46.8
Interim Contractor Support																				
Installation Cost		11.7		2.9																14.7
TOTAL PROCUREMENT	422	192.8		5.6															399	198.4

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

*** One (1) Prototype (CAINS,DFDC,ARMCOS) and one (1) Trial Kit Installation (TKI) (CAINS,DFDC) procured via NRE will be installed in fleet aircraft bringing total aircraft to 111. Remaining nineteen (19) DFDC procured by ES-3A program.

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B MODIFICATION TITLE: S-3 Critical Avionics Upgrade (OSIP 20-95) SMS (ARMCOS)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Contractor Field Mod Team

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: ____ FY 2004: ____ FY 2005: ____

DELIVERY DATE: FY 2003: ____ FY 2004: ____ FY 2005: ____

($ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
FY 2002 & PY (42) kits *	14	2.6	28	0.5															42	3.2
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	14	2.6	28	.5															42	3.2

* Includes one (1) Prototype

Twenty-five (25) installs funded in FY02 will be installed in FY03.

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	14	7	9	7	5																
Out	12	8	8	7	7																

	FY 2008				FY 2009				To	
	1	2	3	4	1	2	3	4	Complete	TOTAL
In										42
Out										42

Exhibit P-3a

MODELS OF SYSTEMS AFFECTE S-3B MODIFICATION TITLE: S-3 Critical Avionics Upgrade (OSIP 20-95) CAINS II

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: FY 97 prototype/TKI was procured as contractor "turn-key". FY 98 and out are Contractor Field Mod Team (Airframe Block).

ADMINISTRATIVE LEADTIME: 4 Months PRODUCTION LEADTIME: 12 Months

CONTRACT DATES: FY 2003: ____ FY 2004: ____ FY 2005: ____

DELIVERY DATE: FY 2003: ____ FY 2004: ____ FY 2005: ____

($ in Millions)

Cost:	Prior years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
FY 2002 & PY (111) kits *	85	.0	22**	2.4	2 ***														109	11.4
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	85	.0	22**	2.4	2 ***														109	11.4

* Includes one (1) Prototype and one (1) TKI.

** Ten (10) installs funded in FY01 and prior will be installed in FY2003

*** Two (2) installs funded in FY03 will be installed in FY04

Installation Schedule

	FY 200	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	85	6	5	5	6	2															
Out	85	4	4	6	6	4															

	FY 2008				FY 2009				To	
	1	2	3	4	1	2	3	4	Complete	TOTAL
In										109
Out										109

NOTE: Two (2) aircraft striken before their scheduled CAINS II install.

Exhibit P-3a INDIVIDUAL MODIFICATION

MODIFICATION TITLE Co-Processor Memory Unit (OSIP 04-96)

MODELS OF SYSTEM AFFECTED: S-3B TYPE MODIFICATION: Operational Improvement

DESCRIPTION/JUSTIFICATION:

The Co-Processor Memory Unit (CPMU) replaces the S-3B MMU-576 Drum Memory Storage (DMS) Unit, the OL-230 Post and Display Processor (PDP) and the AN/AYK-10 General Purpose Digital Computer (GPDC). The Operational Requirements Document (ORD) # OR-927-AS was approved 27 Mar 77 and stated the requirement for software and computer capability to support a targeting capability and direct exchange of data between CV, CVW and surface assets. Moreover, the reliability, maintainability, and obsolescence of the DMS, PDP, and GPDC has degraded to levels which significantly hinder the ability to meet aircraft tactical mission requirements. The CPMU development agreement between the U.S. Navy and Canadian Government contained the requirement for an open architecture design which replaced obsolete equipment. The CPMU fully emulates the DMS and replaces 5 WRA's, resulting in significant space/weight savings. CPMU incorporates an open architecture design as a foundation for future processor growth. CPMU will host a mission program written in ADA software language (RDT&E funded). Trainer procurement is for maintenance trainer A and B kits. The ECP for this effort is Loral AYK-23-002 (with revisions) which modifies 65 aircraft and provides growth interfaces to host additional mission equipment. Procurement includes mission enhancements to provide for compatibility with S-3B Surveillance System Upgrade (which encompasses an APS-137 radar and EO/IR sensor) and is in conformance with the ORD cited above.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The Co-Processor Memory Unit (CPMU) program was initiated as a joint U.S. Navy/Canadian industrial base development effort in 1991. A competitive development contract was awarded in FY 1992. Installation of EDM was completed in April 1995. Approval for LRIP was received in June 1996. LRIP production contract was awarded in June 1996. TKI commenced August 1998. Operational Testing was successfully completed in March 1999. Milestone III decision was approved in June 1999. First fleet installs began in June 1999.

FINANCIAL PLAN (TOA, $ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
RDT&E (H0489)		38.0		0.4																38.5
PROCUREMENT																				
Installation Kits																				
AYK-23 (SSU) **	2	.1																	2	.1
AYK-23	63	1.3	2	.1															65	1.4
Installation Kits N/R		.3																		.3
Installation Equipment																				
AYK-23 (SSU) **	2	1.9																	2	1.9
AYK-23	63	30.8	2	1.2															65	31.9
Installation Equipment N/R		2.8																		2.8
Engineering Change Orders																				
Data		.3																		.3
Training Equipment	1	.9																	1	.9
Support Equipment		.1																		.1
ILS		1.1		.2																1.3
Other Support		6.6		.9																7.5
Interim Contractor Support																				
Installation Cost	56	1.6	8	.3	2	.1													66	2.0
TOTAL PROCUREMENT	187	47.8	12	2.5	2	.1													201	50.5

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 51K

** AYK-23 (SSU) A&B kits installed at "O" level

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: S-3B

MODIFICATION TITLE: Co-Processor Memory Unit (OSIP 04-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: Field Mod Team

ADMINISTRATIVE LEADTIME: 11 Months

PRODUCTION LEADTIME: 16 Months

CONTRACT DATES: FY 2003: 8/03 FY 2004: FY 2005:

DELIVERY DATE: FY 2003: 12/03 FY 2004: FY 2005:

($ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		TC		TOTAL	
	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$	Qty	$
FY 2002 & PY (64) kits	56	1.6	8	.3															64	1.9
FY 2003 (2) kits					2	.1													2	.1
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL **	56	1.6	8	.3	2	.1													66	2.0

* Indicates amount less than 51K.
** Includes fleet end items for training.

Installation Schedule

	FY 2002	FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	& Prior	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	56	2	2	2	2	2															
Out	56	2	2	2	2	2															

	FY 2008				FY 2009				To	
	1	2	3	4	1	2	3	4	Complete	TOTAL
In										66
Out										66